

Scorpion Moped

OPERATOR'S MANUAL



INTRODUCTION

Study this Handbook carefully and carry out the few maintenance tasks faithfully in order to keep your Scorpion Moped in Peak condition.

When ordering parts or requesting service information from your Dealer, always quote the engine and frame numbers to ensure correct identification.

WARNING

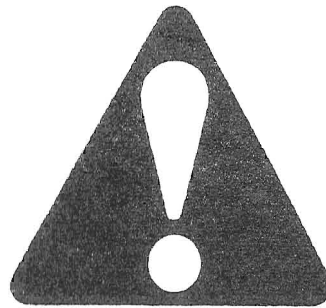
IF THE ENGINE IS RUN ABOVE IDLING SPEED WHEN STATIONARY, THE REAR WHEEL MUST BE CLEAR OF THE GROUND OR DAMAGE COULD OCCUR.

MODIFICATIONS OF FRAME STEERING MECHANISM, SUSPENSION SYSTEM OR WHEELS MAY ALTER THE HANDLING CHARACTERISTICS AND RENDER MOPED UNSAFE IN NORMAL USE. USE ONLY GENUINE REPAIR PARTS AND SEE THAT ROUTINE MAINTENANCE IS CARRIED OUT. IF ANY UNUSUAL OR ABNORMAL SITUATIONS OR CHARACTERISTICS ARE NOTED, IMMEDIATELY DISCONTINUE USE AND CONSULT YOUR DEALER.

Welcome to Scorpion

This manual has been prepared by Scorpion to help you enjoy your Scorpion Moped to the utmost. Read it carefully before operating.

It describes the maintenance procedures that will keep your machine safe and dependable.



Look for this symbol to point out important safety precautions. It means -- Attention! Become Alert! Your safety is involved.

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SPECIFICATIONS

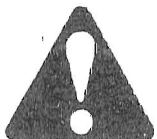
Overall length -----	66.5"
Overall width -----	28.25"
Overall height -----	43"
Saddle height -----	34" Maximum, 30" Minimum
Weight (Dry) -----	103 lbs.
Engine type -----	Single cylinder two-stroke 49.65cc 40 mm bore x 39 mm stroke. C.R. 7.5:1
Transmission type -----	Single speed automatic clutch - SC-1 Two speed automatic clutch - SC-2 & SC--2X
Suspension type -----	Front: Telescopic fork Rear: Spring units & swinging fork.
Total fuel tank capacity -----	.95 gallons (U.S.) including reserve of .13 (U.S.) gallons.
Fuel/Oil ratio -----	40/1 - Two cycle Cuyuna Engine Oil or equivalent
Lighting -----	6V-23 Watt output
Chain -----	½" x 3/16" x 91 Pitch
Carburetor -----	DELLORTO - SHA 14-12 with choke lever which is automatically released by throttle twist grip.

SPECIFICATIONS (continued)

Spark Plug ----- Bosch W175T30 or Champion N-5
Spark Plug Gap ----- .020
Tire Size ----- 2.25" x 17"

Tire Inflation Pressures

Rider Weight	Front Tire	Rear Tire
112 lbs	15 lbs	23 lbs
126 lbs	15 lbs	26 lbs
140 lbs	15 lbs	27 lbs
154 lbs	15 lbs	29 lbs
168 lbs	17 lbs	30 lbs
182 lbs	20 lbs	33 lbs
198 lbs	21 lbs	36 lbs
210 lbs	21 lbs	36 lbs



INCORRECT PRESSURES CAN CREATE A DANGEROUS CONDITION



SAFE DRIVING TIPS



Observe all Federal, State, Provincial and Local laws.

Use both hands for steering your Moped.

Observe fuel supply and fuel lever before riding.

Keep lights operable when riding at night.

Keep all protective shields in place while riding.

Keep a safe distance between you and the vehicle ahead of you.

Match speed to road conditions.

Observe all posted Highway Signs.

Mentally practice what to do in an emergency so you will be ready if one occurs.

Always ride with both feet on pedals and pedals parallel to the ground.

PREOPERATING TIPS

Read Operator's Manual before riding.

Learn your controls. Know how to stop in an emergency.

Check lights.

Operate the throttle and brake controls several times before you start the engine to insure that they are free.

Provide inexperienced operators with proper instructions before allowing them to use your Moped.

When fueling, leave some expansion space in the tank. Heat may cause gasoline to expand and overflow tank.



WARNING! INSTALLATION OF NON-AUTHORIZED PARTS OR ACCESSORIES MAY BE HAZARDOUS. CONSULT YOUR DEALER BEFORE MAKING THIS TYPE OF INSTALLATION.

MIXING FUEL

The two cycle engine that powers your Moped requires that oil be mixed with gasoline for engine lubrication. Use clean, fresh regular (leaded) gasoline.

Note: It is imperative to maintain the correct fuel/oil ratio. Too much oil will cause spark plug fouling and excessive smoke. Too little oil will cause engine damage from inadequate lubrication.

Perform the following steps in mixing the fuel:

1. Put $2\frac{1}{2}$ (U.S.) gallons of gasoline in clean six gallon container.
2. Add one can (16 oz.) of Cuyuna Two Cycle Oil or equivalent.
3. Shake container.
4. Add the remaining $2\frac{1}{2}$ (U.S.) gallons of gasoline.
5. Agitate the container again.
6. If mixing smaller quantities of fuel, make certain the 40/1 ratio is maintained (40 parts gas to 1 part oil).



CAUTION! Gasoline is dangerous. Do not refuel when smoking, near open fires or when the engine is running.

Always keep fuel container and fuel system clean. Dirty fuel can cause engine failure.

Do not attempt to mix gas and oil in your Moped gas tank as improper mixing will result and engine damage could occur.

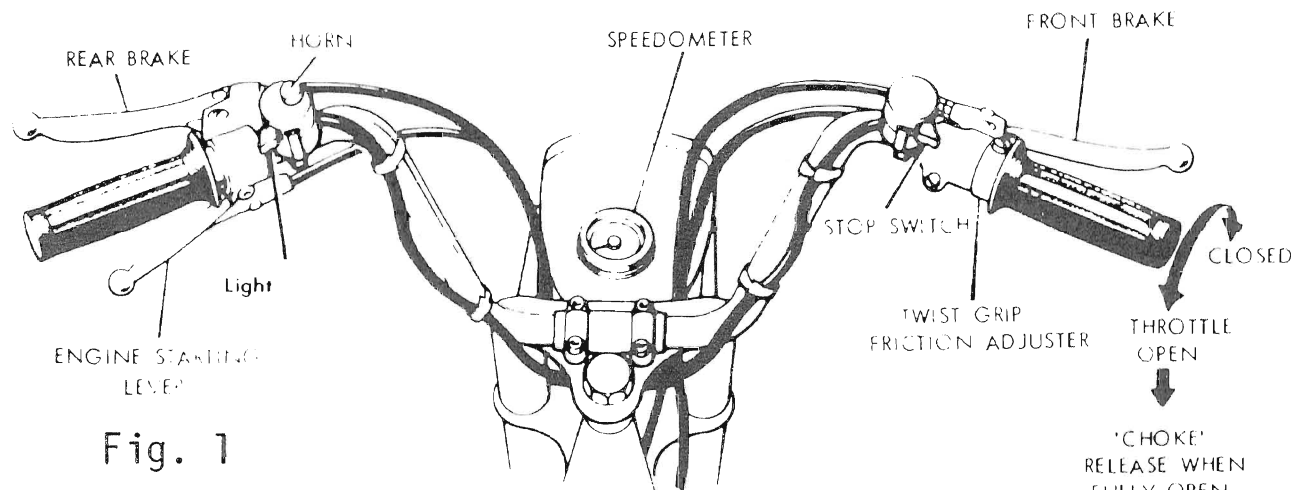
Regular leaded gas is recommended.

When adding fuel, depress fuel vent valve (Fig. 2) at rear of seat to eliminate air locks.

CONTROLS

Description and Function

1. Brake levers are located for convenient gripping action with the fingers of both the right and left hands. The rear brake is actuated with the left hand and the front brake with the right hand.
2. The High-Low light switch is located near the left side handle grip and is a two position switch.
3. Throttle - Located in right hand twist grip. Twisting towards operator opens throttle. Twisting away from the operator closes throttle. More or less friction may be applied by loosening or tightening the twist grip friction adjuster screw located forward and below the twist grip.



4. Safety Stop Switch - This is a two position switch marked, "OFF" AND "RUN", located forward of throttle grip.

5. Steering Lock is located below steering head. To lock, turn to full left, push key in, turn clockwise and withdraw key. When riding machine, remove key to eliminate loss or breakage.

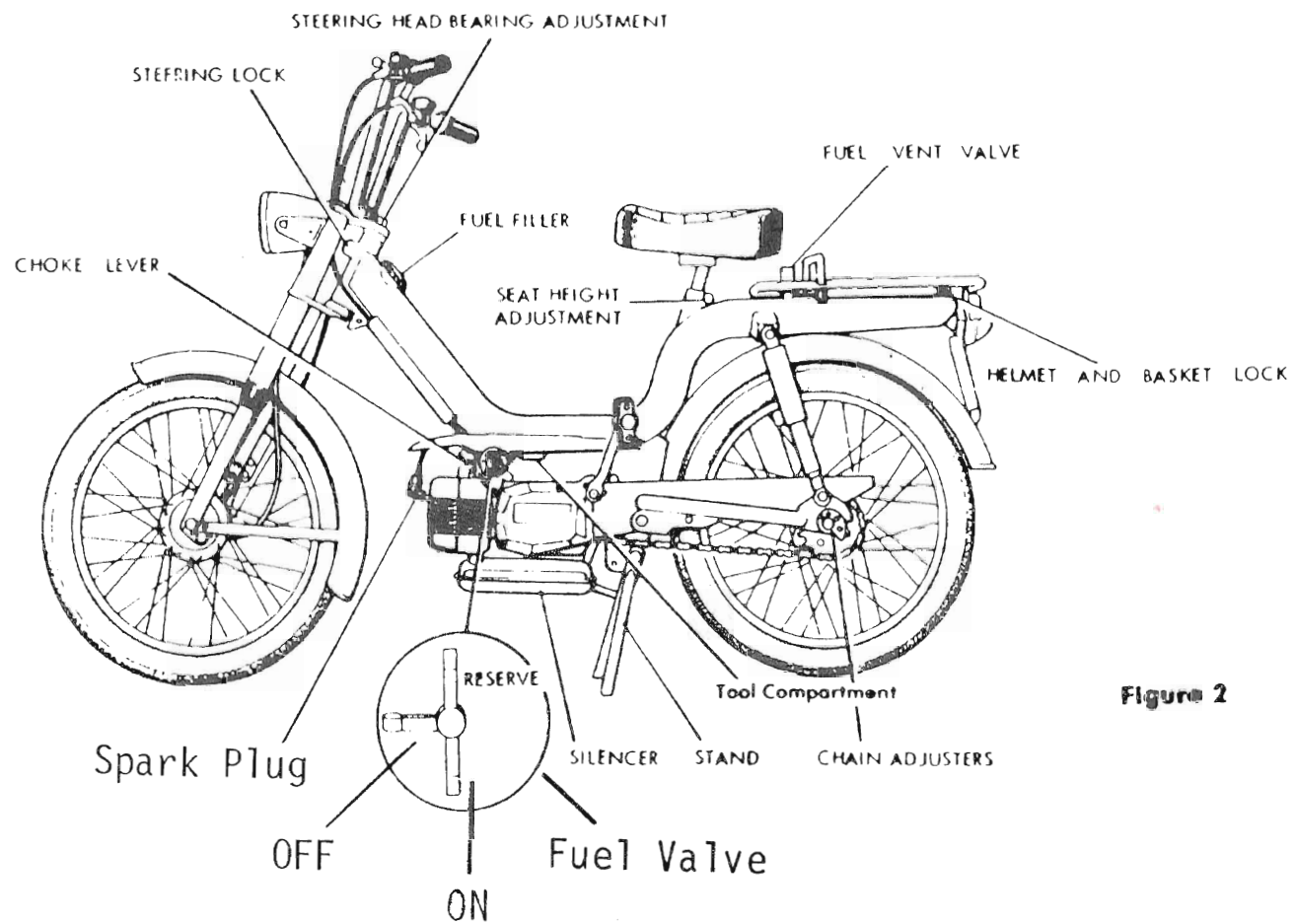
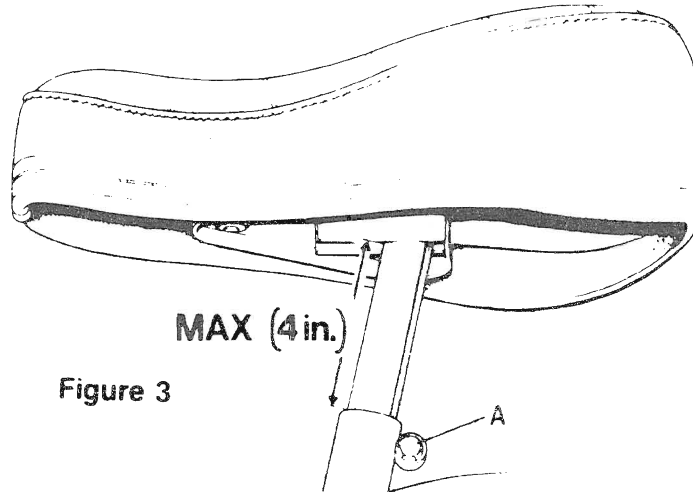


Figure 2

ADJUSTMENT OF THE RIDING POSITION

The seat and handlebars are adjustable to suit rider preference.

SEAT HEIGHT is adjustable by loosening nut (A) as shown in Fig. 3 and working the seat post up or down to the desired height. The seat post must not be extended beyond four (4) inches from the frame. Be certain that the seat is "straight" in relation to the frame and tighten the nut (A). Normally it is recommended that the seat height is such that, with the Moped on its wheels, the rider may sit with both feet flat on the ground, knees slightly bent.



BRAKE ADJUSTMENT

Each brake is adjusted to take up excess play by loosening the locknut (A) and turning the knurled adjuster (B) shown in Figure 4. Be certain that after adjustment each wheel turns easily without binding. If the brake binds, loosen until the wheel will turn easily, then retighten the lock nut. Binding of the brakes will reduce fuel economy and can cause damage to the brakes and wheel bearings. When all adjustment has been used, loosen the handlebar adjuster completely and take up excess play at the brake end. Further adjustment may then be made at the handlebar control in the normal way.

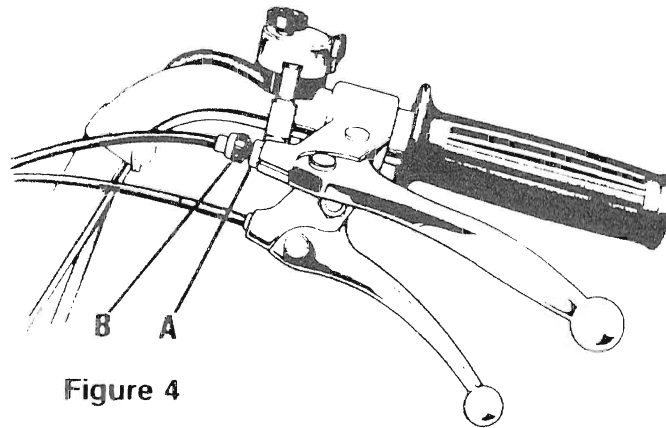


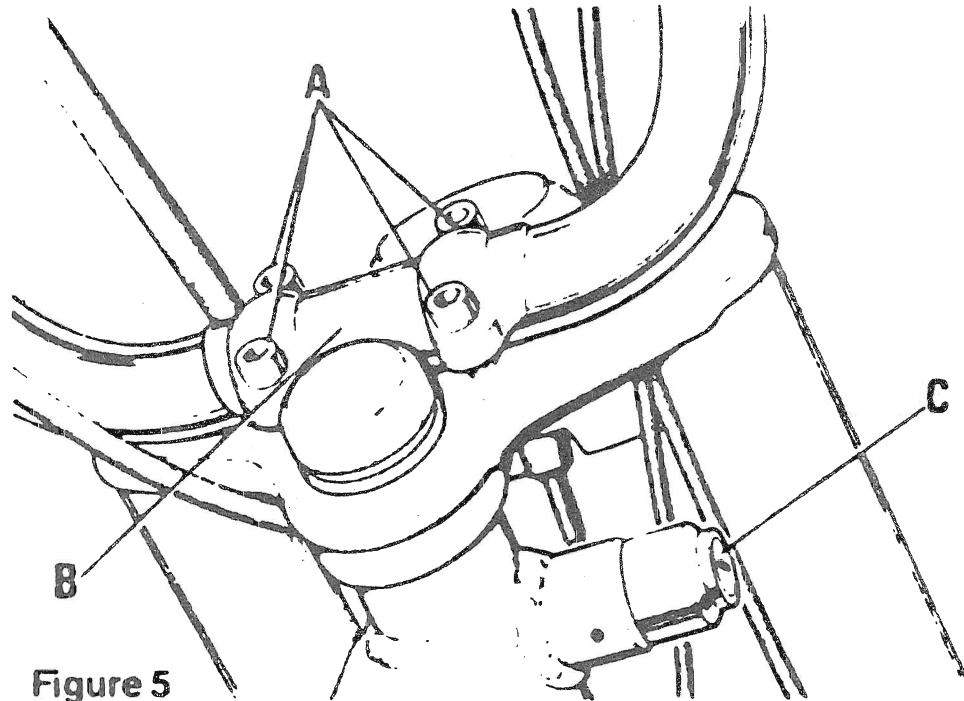
Figure 4

HANDLEBAR ADJUSTMENT

By loosening the four (4) screws (A) on the handlebar clamp (B) in Figure 5, the handlebars may be pivoted to suit the rider.



After adjusting, retighten screws.



TOOL COMPARTMENT

The spark plug wrench and handle are stored in the Tool Compartment or Tray located on the left underside of the engine cover which is retained by a knob from beneath.

STARTING THE SCOPRION MOPED

Turn the Fuel Valve to ON (Fig. 2). The valve provides 3 positions:

OFF -- lever forward
ON -- lever downward
RESERVE -- lever upward

Make certain STOP switch is in run position (Fig. 1).

STARTING (when the engine is cold)

A cold start lever is provided on the carburetor (Fig. 7). To operate, move downward in the direction of the arrow. Pedal to start engine (see instruction on page 17). As soon as the engine is running and warmed up sufficiently to run smoothly, the lever must be returned to RUN. This is achieved by momentarily opening the throttle (turn twistgrip towards rider) and the cold start lever will disengage. Note: Do not disengage by hand or damage may occur.

STARTING (when the engine is hot)

Do not operate the cold start device with hot engine or spark plug fouling may result.

Your Scorpion Moped can be started on the stand using the pedals to turn the engine or it can be pedalled forward as described in the following paragraphs.

STARTING ON THE STAND

Sit on the machine leaning forward to ensure rear wheel is clear of the ground. Open the throttle slightly (towards rider will speed up engine), turn the pedals forward, pull and hold in the starting lever (beneath the left handlebar). As the pedals continue to be turned, they are connected to the engine which will start to run. At this stage, release the starting lever and return the throttle to the idling position. If the engine does not start immediately, repeat the procedure.

STARTING BY PEDALLING

Open the throttle slightly (towards the rider will speed up the engine), pedal the Moped as a bicycle. As soon as it is moving, pull and hold in the starting lever and continue to pedal until the engine runs.

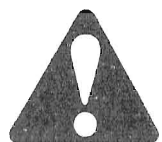
As soon as the engine runs, release the starting lever and regulate engine and road speed with the throttle control. Remember that twisting the throttle towards the rider increases speed and turning it away from the rider reduces it.

BREAK IN PERIOD

As with all new machines your Scorpion Moped requires breaking in carefully to allow mating surfaces to wear in with one another. Avoid prolonged high speed operation during the first two tanks of gasoline.

To slow down and stop, close the throttle (turn away from the rider) and apply both brakes gently and progressively. The Moped will come to rest with the engine running and will move off again by opening the throttle.

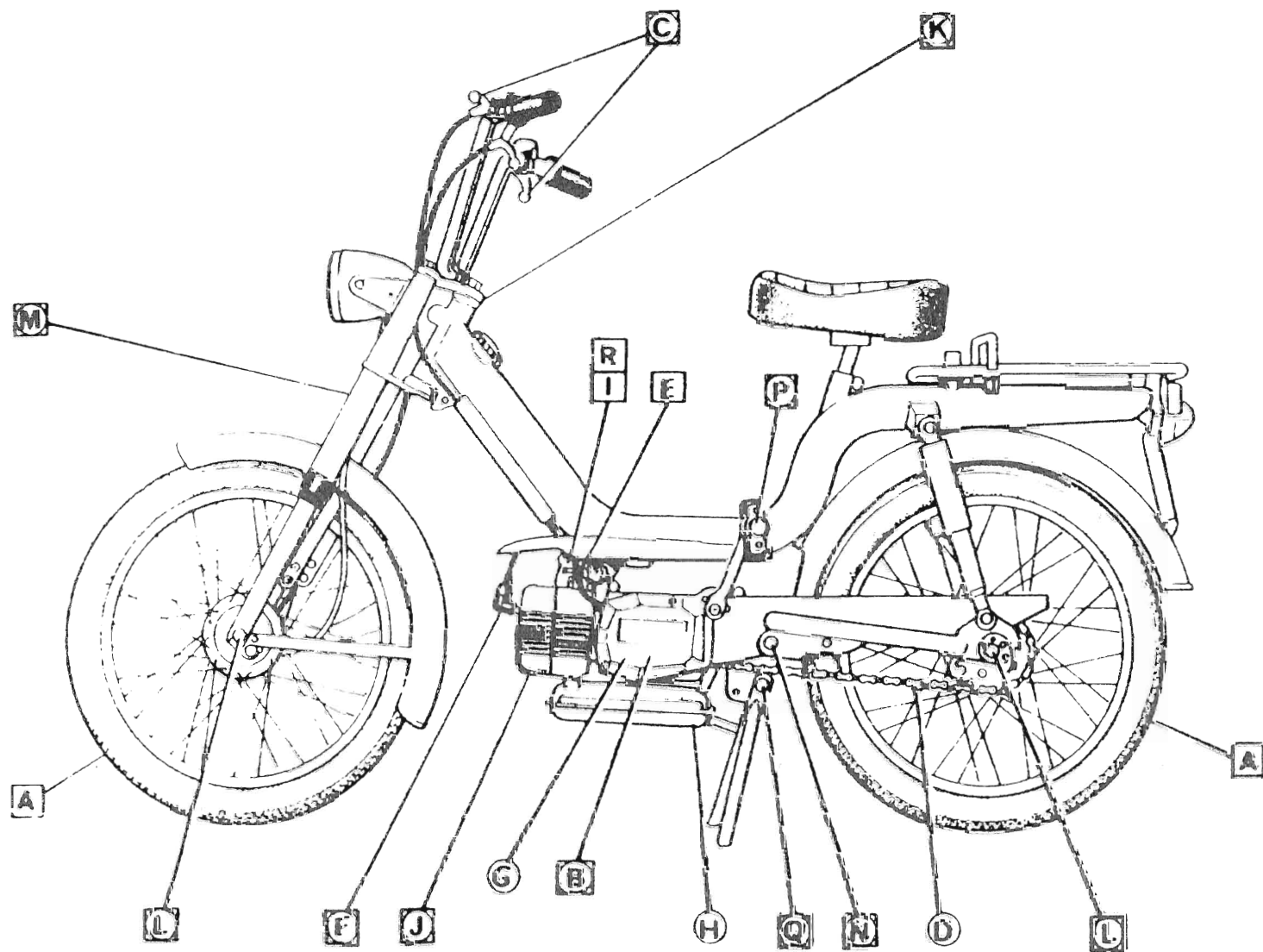
To stop the engine, when the Scorpion Moped comes to rest, flip stop switch to STOP position. Turn off the fuel if the Moped is to be parked.



Moped must be ridden with pedals parallel to the ground and with feet on pedals. This will eliminate the possibility of pedal dragging on the ground during a tight turn.

USE OF THE STAND

The stand is very easy to use. When parking the machine, hold stand against the ground with the toe and roll the machine backwards.



- refers to L.H. side of machine
 □ refers to R.H. side of machine
 ◻ same both sides

Figure 6

SCORPION MAINTENANCE CHART

Item	Distance	Item	Page
A		Check tire pressure weekly	4
B	At first 250 miles only	Drain and refill gearbox/ transmission	22
B	Every 500 miles	Check gearbox/transmission level Adjust front and rear brakes Adjust and lubricate chain	22 13 33
C	Every	Lubricate control LEVERS	
R	1,500 miles	Remove air cleaner, wash element re-oil and replace	25 & 26
E		Clean carburetor filter	27
F		Clean and set spark plug	30

Item	Distance	Item	Page
G	Every 3,000 miles	Check contact breaker point-gap & lubricate contact breaker heel	28 & 29
H	Every 2,000 miles	Clean Muffler	25
I	Every 3,000 miles	Strip, clean & re-assemble carburetor	26 & 27
J.	Every 4,000 miles	Decarbonize engine & silencer	24
B	Every 6,000 miles	Drain & refill gearbox/transmission	21, 22 & 23

GEARBOX/TRANSMISSION LUBRICATION SC-1

The oil level plug (A), Fig. 7 serves also as the filler plug. To check the level, remove this plug. Oil should appear at the level hole. If low, oil should be added through the level plug hole, with the Moped resting on its stand, until oil just starts to overflow from the hole. Tighten the plug.

To drain the transmission, ride the Moped to warm up the oil. Remove the silencer by unscrewing nuts (C) and nut and bolt (D). Then, with the Moped on its stand, place a drain tray beneath the power unit. Remove plug (B) to allow the oil to drain away. Replace plug and replenish with new oil up to the level of plug (A) following the above instructions.

GEARBOX/TRANSMISSION LUBRICATION

SC-2 AND SC-2 2X

The transmission requires oil as listed on page 23. The dipstick (A) Fig. 7 serves also as the filler plug. To check the level, remove the dipstick.

The correct oil level for normal running is when oil is visible at the lower mark on the dipstick. If the level is low, fill through dipstick hole to the lower mark.

The top mark on the dipstick is the level mark used on initial fill or when refilling, after completely draining the gearbox through the drain plug, (B), Fig 7, in the underside of the transmission case. After a short period of running, the oil level will settle from the higher to the lower mark. Note, all dipstick readings are taken after the dipstick has been screwed down.

To drain the transmission, ride the Moped to warm up the oil. Remove the silencer by unscrewing nuts (C) and nut and bolt (D). Then, with the Moped on its stand, place a drain tray beneath the power unit. Remove plugs (B) to allow the oil to drain away. Replace plugs and replenish with new oil up to the level of the dipstick top mark (A) following the above instructions. Replace silencer.

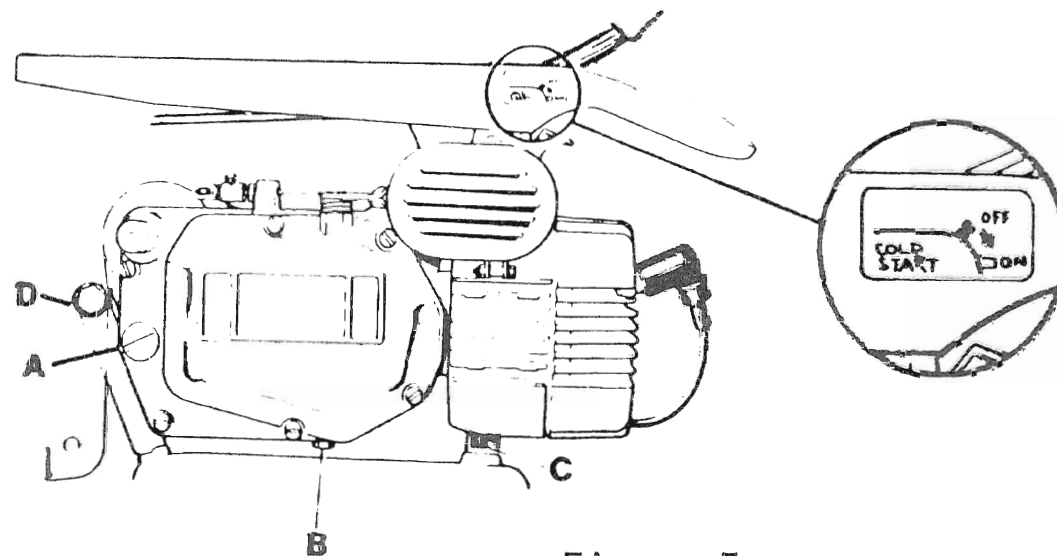


Figure 7

SC 2 & SC 2 X

RECOMMENDED LUBRICANTS

<u>Engine</u>	<u>Transmission</u>	<u>Hubs & Steering Head</u>
Cuyuna Two Cycle oil or equivalent	20W/30 Motor Oil	Lithium Grease
BIA Approved Equivalent	API Engine Service Class SE or Better	

DECARBONIZING (ENGINE AND SILENCER)

This operation is intended to remove the carbon deposits which accumulate in the engine and exhaust system and cause power loss. It is recommended that the silencer be decarbonized at 2,000 mile intervals and the engine at 4,000 mile intervals. These are approximate figures which may need to be reduced where the machine is constantly driven very slowly or operated with excessive oil content in the fuel. Engine decarbonizing involves removal of the carburetor, head and cylinder. Such work should be performed by a Scorpion Dealer.

AIR CLEANER

The air cleaner is of the simple oiled wire wool type; its purpose is to remove dirt and foreign matter from the air intake, thereby avoiding abrasive damage to the carburetor and engine.

To gain access to the air cleaner, loosen the clip bolt (B), Fig. 8 clamping it to the carburetor, twist and pull the grey plastic cleaner cover away. The air cleaner element is now visible and is a push-in fit to the carburetor. A screwdriver can be used beneath the lip to pull the element out without damage. To clean, wash the element in clean solvent and then re-oil by immersion in light engine oil. Allow to drain, then reinstall element.

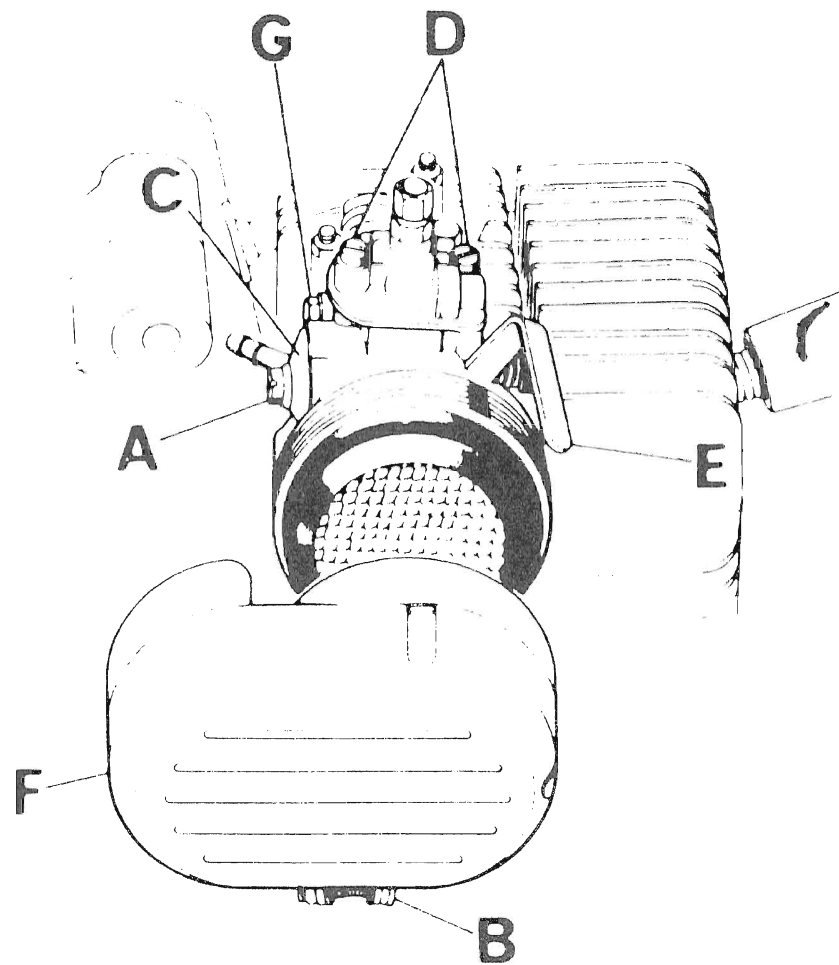


Figure 8

CARBURETOR FUEL FILTER (FIG. 8)

To clean the filter, turn "OFF" the fuel valve, loosen the clip (B) and lift away the air cleaner housing (F), remove screw (A) and pull the union (C) away. The nylon filter disc thus revealed can be lifted out. Clean the filter by washing in clean solvent. Make certain that the filter fits the housing properly before installing the union and do not overtighten the securing screw. Install the air cleaner housing.

CLEANING CARBURETOR (FIG.8)

Every 3,000 miles, dismantle the carburetor for cleaning and removal of foreign matter. To remove the carburetor, turn off the fuel valve, loosen the clamp screw (G) and twist the instrument free of the inlet pipe. Unscrew (A) and lift away the fuel pipe union (C) and remove the plastic filter disc to prevent loss.

The above service should be performed by your Scorpion Moped Dealer.

The floatbowl, which is secured from beneath with two screws, should be removed to clean out foreign matter. Try not to disturb the resilient sealing ring on the float bowl. To dismantle further, remove the top two screws and lift out the carburetor top complete with cable and throttle slide. The slide should be protected from accidental damage until reinstalled. Remove the air cleaner and element as on Page 24. If not already removed, take off the float bowl. All Components should now be washed in clean solvent ready for reassembly. Ensure that the float needle moves easily when the float is moved. Remove the main jet and blow through this to clear out dirt. DO NOT clean jets by passing wire, etc. through -- this will cause damage. Reassemble and reinstall in reverse order but note that the resilient sealing ring for the float bowl must be intact, also take care not to overtighten either float bowl screw or carburetor clamp bolt. The latter is particularly important since the flange could be cracked by over-tightening.

CONTACT POINTS

To maintain good starting and fuel economy, reset the contact breaker points at the recommended intervals.

Remove two screws and remove the left side outer cover, Fig. 9. Turn the flywheel (B) until window (C) is in the position shown in Fig. 10. The contact points are then visible.

Turn the flywheel a little at a time counter clockwise until the points are fully open. At this stage, the gap should be .014" - .016". If not, loosen screw (D) and adjust, retighten Screw (D). Reinstall the outer cover (no joint washer is used) and secure the screws. Note that the lower front screw is longer.

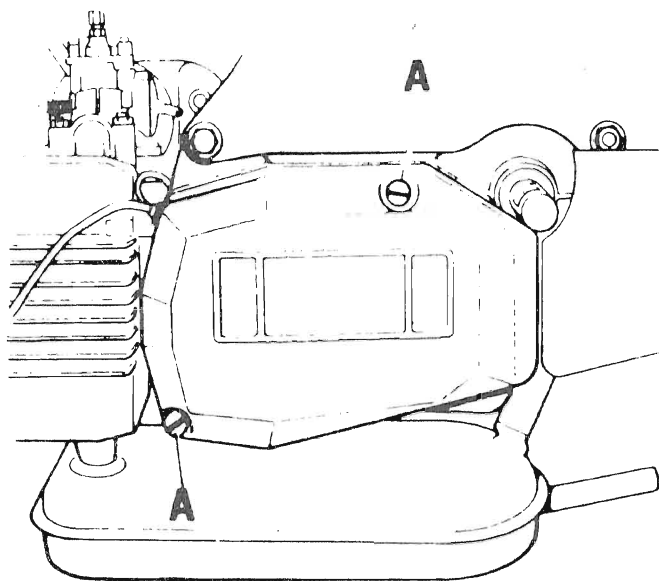


Figure 9

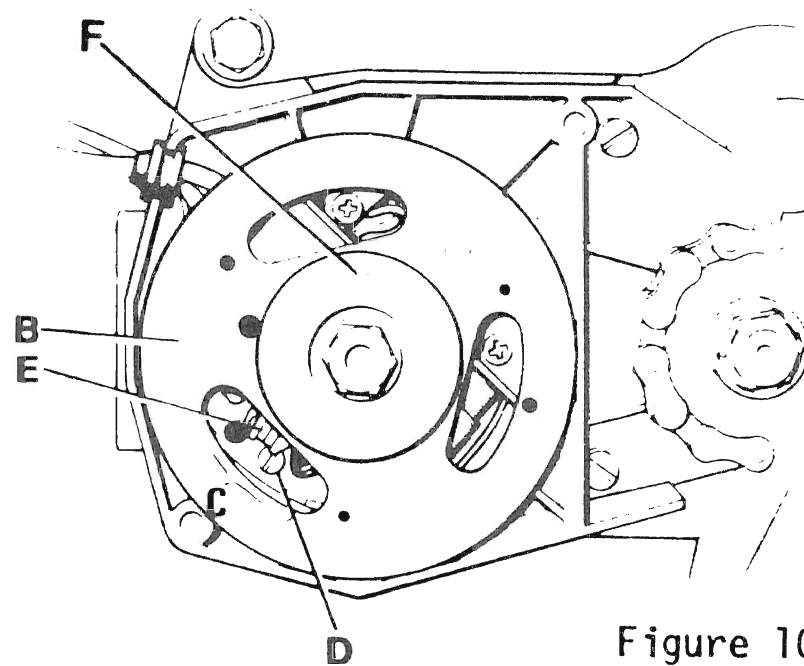


Figure 10

SPARK PLUG

Set the plug gap .020" only by bending the side electrode with care. DO NOT attempt to move the center electrode. Use wire gauge for measuring gap.

TIRE PUNCTURES--WHEEL REMOVAL

Front Wheel

Place the Moped on the stand. Raise front wheel off the ground with suitable blocking. Loosen the brake cable adjustment at the handle-bar end and at the brake end, then disengage the cable nipple. It is not necessary to disconnect the speedometer cable. Remove completely the axle nuts and washers, twist the wheel a little in the forks allowing the brake anchor to clear the peg on the fork leg and the wheel can be dropped free of the forks. Lift speedometer drive away from the wheel and allow it to hang on the cable.

To reinstall, relocate the speedometer drive before placing the wheel in the forks and make sure the brake anchor stay is located in the fork lug. When the brake cable is reconnected, adjust as required. Tighten axle nuts.

Rear Wheel

Support the Moped on the stand, loosen both ends of the brake cable and disconnect at the wheel end. Remove the chain split (C) Fig. 11 taking care not to let the chain run off the sprocket at the power unit. Loosen well but do not remove the axle nuts. Lean the Moped to the left, still on the stand, angle the wheel slightly in the swinging fork to disengage the brake anchor and lift the wheel rearwards and to the right, clear of the swinging arm.

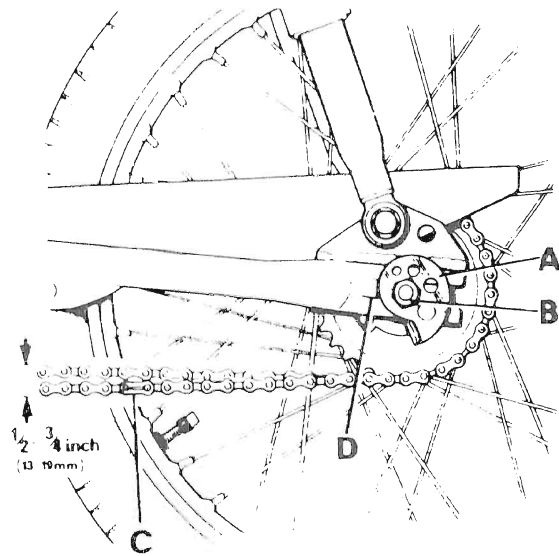


Figure 11

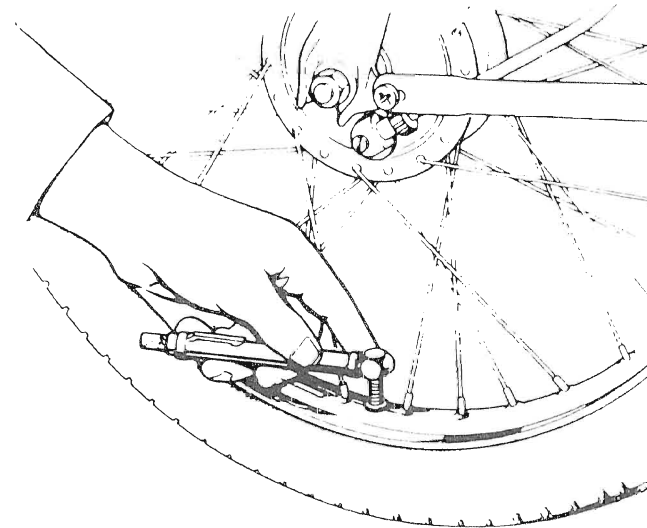


Figure 12

When reinstalling, reverse the previous instructions, engage the brake anchor peg, and position wheel nuts, washers and chain adjusters out-board of the swinging arm end plates. After adjusting chain tension, make sure that the wheel nuts are retightened securely and adjust the brake as required. When refitting the chain split link, ensure that the open end is pointing against direction of chain travel.

The recommended tire pressures (a table of tire pressures for varying loads appears on page 4) should be maintained. Wrong pressures can affect steering, braking and fuel consumption. Check as shown in Fig. 12 and when pressure is correct, replace the dust cap.



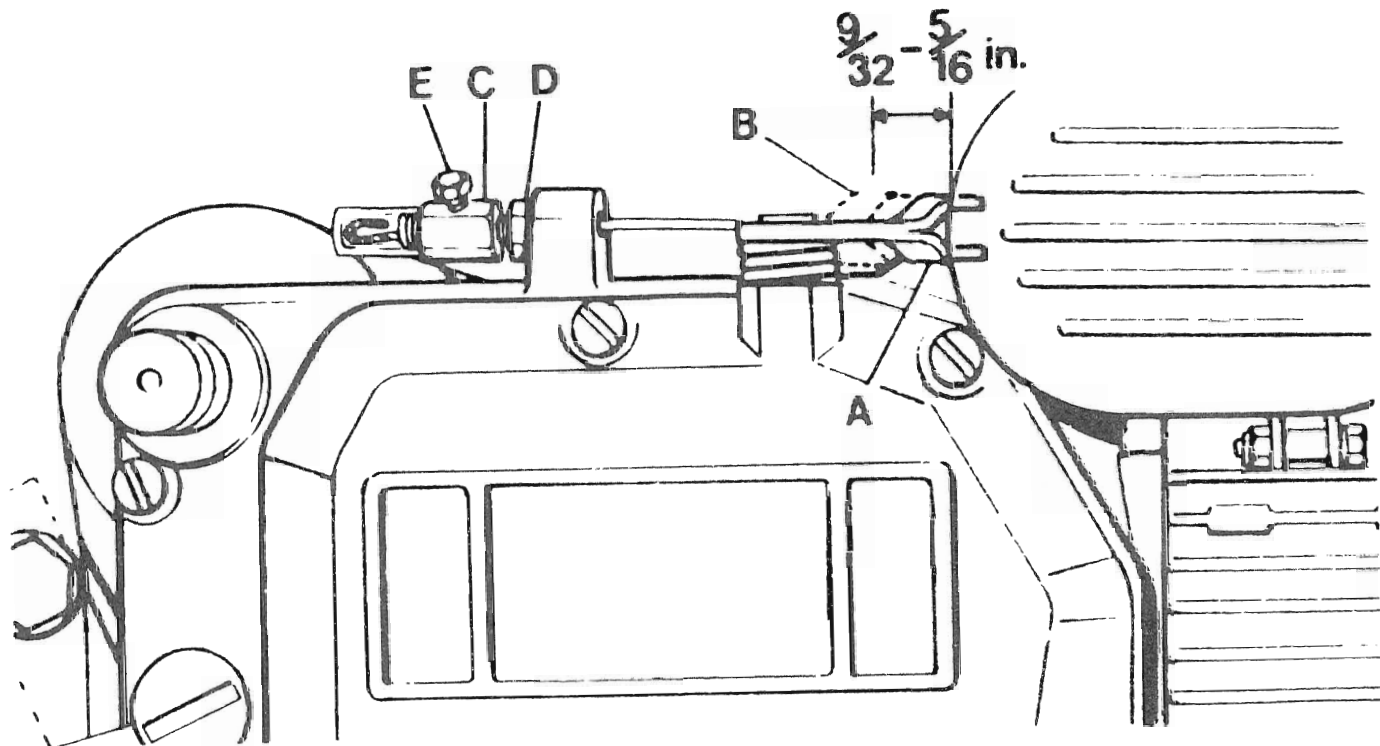
NOTE: INCORRECT TIRE PRESSURES ARE A SAFETY HAZARD

CHAIN

Maintain the rear chain at the correct tension to prevent excess chain and sprocket wear. Chain tension should only require infrequent attention. Cam type adjusters (A) shown in Fig. 11 are used to move the wheel spindle along the fork end. To adjust, place machine on stand, loosen nuts (B) on both sides of the wheel and then rotate both adjusters (A) by the same amount until the free play, see Fig. 11, on the bottom run of the chain is between $1/2$ " and $3/4$ " at the midway point. Revolve wheel to ensure chain is adjusted at its tightest point. Ensure the adjusters rest on the abutment (D) and are in line with each other. Hold the adjusters in the correct position until the spindle nuts are fully tightened.

Commercially prepared drive chain lubricants are available at your dealer and should be used in preference to ordinary lubricating oil. Refer to the can for instructions.

Figure 13



ADJUSTMENT OF STARTING LEVER CABLE

The starting lever is used for starting the engine. It is necessary that the actuating lever is correctly adjusted, otherwise the engine will not engage or disengage. To adjust, proceed as follows:

1. Pull the lever by hand until resistance is felt, Fig. 13 (B).
2. Let lever back $9/32"$ to $5/16"$ to (A). Lightly tension cable with lever in this position using adjuster (C). Lock with nut (D). If unable to achieve this, roughly adjust by sliding nipple (E) to desired position. Lock up, then obtain final adjustment on adjuster (C).

Note: When disengaged, the lever should be in position A, and the rear wheel free to run without turning the engine.

TROUBLE SHOOTING

No Fuel at Carburetor

1. Fuel Valve Closed
2. Tank Empty
3. Gas Line Plugged
4. Filter Plugged

No Spark at Plug

1. Plug Fouled
2. Dirty Contact points or incorrect gap
3. Wires not connected

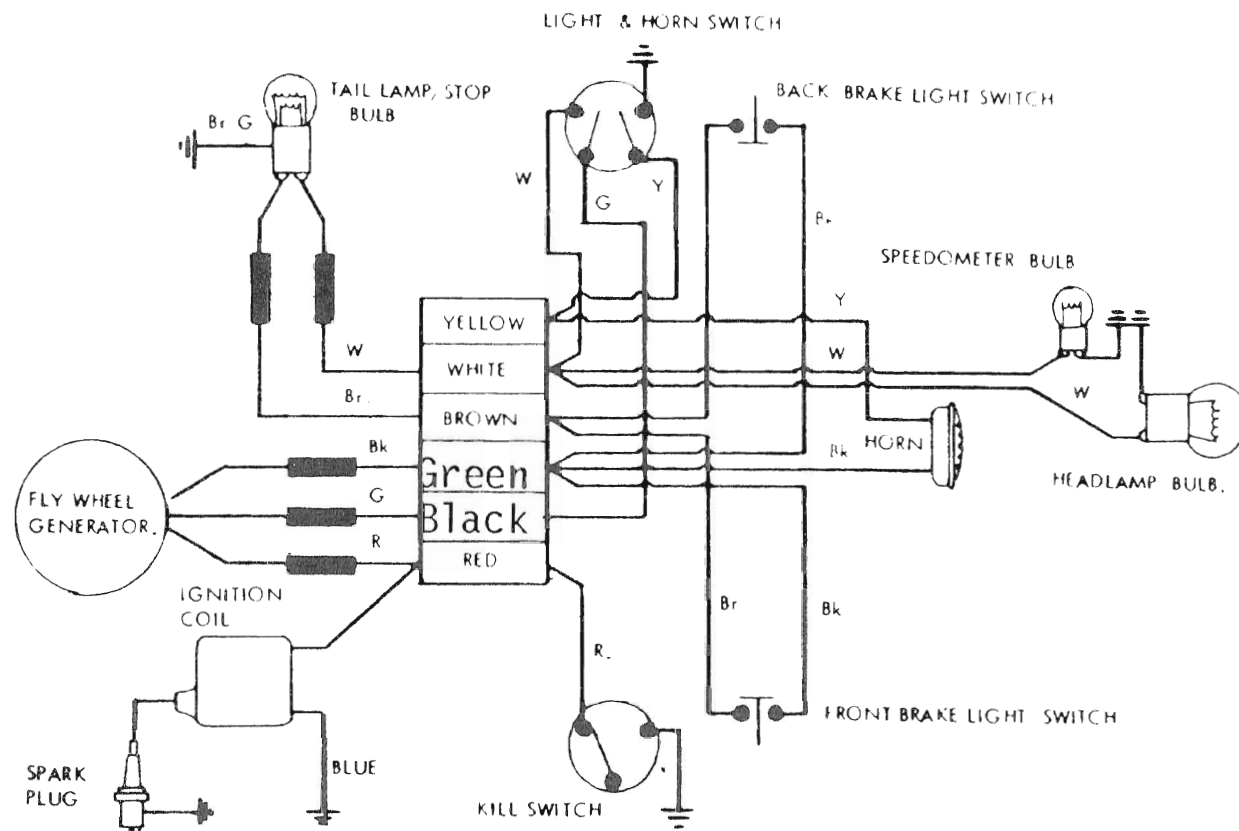


Figure 14

ACCESSORIES AVAILABLE

Touring Windshield

Leg Fairings

Security Locks

Saddle Baskets

Helmet Lock

LIMITED WARRANTY

Scorpion, Inc., Crosby, Minnesota

SCORPION, INC. (Scorpion) hereby warrants each moped to the first retail purchaser to be free from defects in material and workmanship for a period of ninety (90) days from the date of purchase or 4,000 miles, whichever occurs first, provided the moped is used in a normal and reasonable manner.

This warranty gives the retail purchaser described above specific legal rights and such purchaser may also have other rights which vary from state to state.

This warranty covers all parts except light bulbs, spark plugs, breaker points, and condensers.

The retail purchaser's responsibility under the terms of this warranty is to transport the moped to an authorized Scorpion Dealer's service shop at owner's expense, or to reimburse Scorpion's Dealer for any travel or transportation expense involved in fulfilling this warranty.

Scorpion's responsibility under the terms of this warranty is to repair or replace any parts which are defective in material or workmanship free of charge and to pay dealer's labor charges for such repair or replacement in accordance with Scorpion's established labor reimbursement policy.

Scorpion shall not be liable under the warranty for (1) any failure or damage resulting from purchaser's failure to provide reasonable and necessary maintenance, (2) failure or damage caused by abuse or unreasonable use, (3) damage other than that resulting directly from the failure or malfunction of the warranted product, (4) Damage resulting from the use of replacement parts not sold and warranted by Scorpion, (5) damage resulting from the use of attachments or modifications made without the express written consent of Scorpion.

Scorpion reserves the right to incorporate changes or improvements in the design of its product at any time without incurring any obligations to change products previously manufactured.

This warranty is expressly in lieu of any other expressed warranties.

IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY.

IN NO EVENT SHALL THE RETAIL PURCHASER BE ENTITLED TO RECOVER INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO INCONVENIENCE, RENTAL OR REPLACEMENT EQUIPMENT, LOSS OF PROFIT OR OTHER COMMERCIAL LOSS.

Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusion or limitation of incidental or consequential damages so the above limitations or exclusions may not apply to a particular retail purchaser



SCORPION INC.

CROSBY, MN 56441

218 546-5123